

☆ GARD/ P13 94-318122/40 ☆ EP 619940-A2  
Container for humidifying plant and flower pots - has conventional  
vessels suspended over water with absorbent strips passing through  
vessel down into water (Eng)

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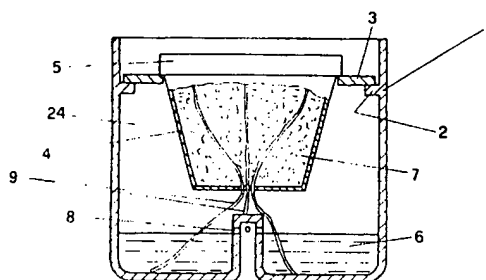
The ceramic, terracotta or plastics container (1) supports  
conventional vessels (4) on an apertured plate (3). The vessels are  
held off the container bottom by their borders (5). An air chamber  
(24) is formed between the vessel and the water (6) placed at the  
bottom of the container. As water evaporates from the reservoir it  
condenses along the air chamber walls.

The water is absorbed by soil in the vessel or reclaimed by the  
reservoir. Strips (9) of absorbent material run through the vessel,  
the soil and into the reservoir to transfer water to the soil.

ADVANTAGE - Prevents root rot by water contact. Has air  
chamber as insulator and humidifier. (9pp Dwg.No.1/10)

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(54) **A container for the purpose of humidifying vessels of flowers and plants and vessels capable of humidifying flowers and or plants.**

(57) A container (1) made for instance of ceramic, terracotta, or plastic material, is capable of supporting conventional vessels (4) by means of a plate (3) which is provided with openings. The vessels have a top peripheral border (5) which protrudes with respect to the peripheral border of the container so that the vessels are raised from the bottom of the container. Water is placed at the bottom of the container, some strips of felt (9) or similar absorbing material is inserted into the vessel and reaches the bottom of the container so that water is transferred to the soil by capillary action and also by evapora-

tion. The containers consist of three compartments; the upper compartment (7) containing the soil, the lower compartment (6) containing the water, and an intermediate compartment (24) forming an air chamber. The walls (the container (1), the plate (3), and the vessel(s) [4]) containing the air chamber (24) act as an evaporation barrier. As water evaporates from the reservoir (6) it condenses along the walls containing the air chamber (24). Water is thereby reclaimed by the reservoir or is absorbed by the soil in the upper chamber (7).

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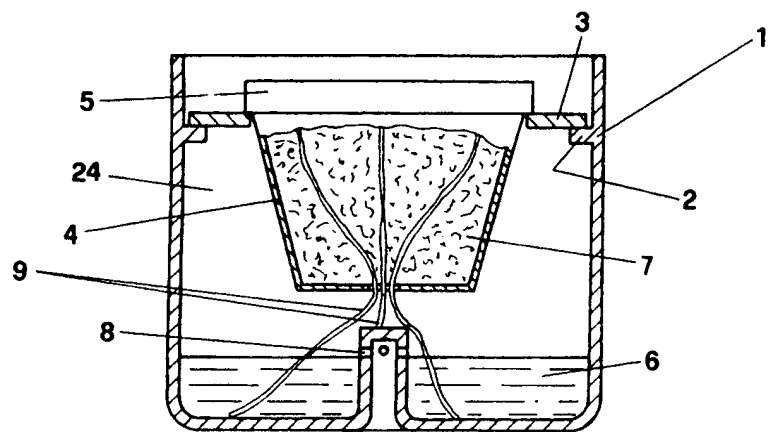


FIG. 1

## FIELD OF THE INVENTION

The present invention relates to containers for watering flowers and plants.

## SUMMARY OF THE INVENTION

The container according to the present invention for watering flowers and plants, permits to maintain moist one or more vessels containing flowers or plants which are supported within the container by means of strips for instance of felt which gradually transmit due to capillary action the quantity of water exactly requested by the flowers and plants which are located within the respective vessels through the soil contained in the vessels placed above the water.

A feature of the container according to the present invention resides in the fact that it permits to support one or more vessels for flowers, the bottom of the vessel remaining raised with respect to the bottom of the container so that the water introduced into the container for humidifying the soil in the vessels remains always below the bottom of the vessels thus avoiding the possibility that roots rot by contact with water.

Another fundamental feature of the invention resides in the means for automatic feeding of the water used for humidifying the soil. The strips are inserted within the mass of the soil of the vessels and are immersed in the lower part in the water of the container until the water is completely consumed.

Still another feature of the container is an insulating humidifying air chamber. As water evaporates from the reservoir, it is contained by the walls of the air chamber (evaporation barrier). The air chamber provides air and water (humidity) to the upper chamber containing the soil. The air chamber also insulates the interior vessel from external environmental temperature extremes.

According to another embodiment of the invention, a vessel for flowers or plants comprises in the interior a peripheral rib on which a plate rests, the plate having openings and dividing the vessel in three compartments of which the upper compartment is intended to contain the soil, the lower compartment contains the water being used as a reserve, and an intermediate compartment forming an air chamber for the gradual humidification of the soil located above the water.

The invention is further illustrated by reference to the accompanying drawings of which:

Fig. 1 is a cross section of the container with a single vessel therein;

Fig. 2 is an upper planar view of the same container which for instance has a circular shape.

Fig. 3 illustrates a container of length greater than the width suitable for placing therein several vessels.

Fig. 4 is a modification of the embodiment of Fig. 1 and shows a vessel with a protruding peripheral border which rests directly on the border of the container which contains water.

Fig. 5 illustrates an embodiment of the invention for containing soil humidified according to the present invention.

Fig. 6 is a cross section of the container of Fig. 5.

Fig. 7 illustrates in cross section the embodiment of a circular vessel having inserted therein a separating circular plate.

Fig. 8 is a planar view of the circular plate of Fig. 7 having openings.

Fig. 9 is a perspective view of a vessel of rectangular shape.

Fig. 10 is a planar view of the plate having openings in the vessel of Fig. 9.

As shown by way of a non-limited example in Figs. 1 and 2, the container consists of a cylindrical body (1) of a diameter capable of containing the vessel of flowers or plants to be humidified. This container has in the upper part a border (2) on which plate (3) rests. Plate (3) has a central opening capable of containing the vessel (4) which is inserted in the central opening up to the rest of its peripheral border which has a diameter (5) greater than the opening.

By substitution of the plate (3) with other openings of different diameters, the same container (1) may be used to contain vessels of diameter either more or less, thus permitting the use of the same container with great flexibility.

Vessel (4) when it is inserted within the plate (3) remains raised with respect to the bottom of the container (1) while water (6) is placed on the bottom of the container for the humidification of the soil (7) contained in the vessel. In order to avoid that the level of water rises to touch the bottom of the vessel, the container is provided with a cylindrical tube (8) which serves the function called "troppo pieno" (too full) so that the level of the water remains always fixed to a level lower than the bottom of the vessel.

It is clear that a similar function of eliminating excess water may also be carried out by a lateral opening (23) placed at a suitable point with respect to the bottom of the container.

The openings provided for preventing too much water in the container, are disposed on the cylindrical body (8) and also serve the function of permitting the entry of air into the container for the purpose of recycling the air in the container.

The absorption of water by the soil in the vessel occurs by means of a certain number of

strips (9) which are made of felt or other suitable absorbing material and which are inserted through the openings formed in the bottom of the vessel (4). The strips go through the entire amount of the soil contained in the vessel so as to achieve a more effective action of humidification of the soil.

The strip (9) must be immersed in the water (6) to the point of touching the bottom of container (1) so as to allow the water to go up, due to the capillary action, to the time when the water is completely consumed.

It is clear that the initial reserve of water placed in the container may permit a regular humidification of the soil of the vessel also for several days in the absence of human intervention and even in the absence of any individual.

The system of humidification in addition to the fact that it exhibits its action for a substantial period of time, offers the further advantage of being self-regulated because the quantity of water being absorbed by the soil by means of the strips is always proportional to the degree of dryness of the soil itself and therefore the absorption requested by the plant placed in the vessel is always sufficient for the cultivation.

The perfect position of the plate (3) and vessel (4) permits to hold the moisture in the interior of the container (1) thus guaranteeing also a perfect thermic insulation, a fact which permits to maintain a more constant temperature in the interior of the container.

Fig. 3 illustrates another embodiment of the single container described hereinabove. It consists of a container (10) of length greater than its width in which may be inserted one or more plates (3) which may rest along the supporting border, the plates having openings of equal or different diameter depending upon the vessels being inserted. In this manner, one may achieve a convenient and elegant plurality of flower boxes in which the vessels of the flowers are humidified with the system described hereinabove.

Another embodiment of the invention is shown in Fig. 4 in which the vessel for the flowers (4) has a peripheral border (5) of lesser thickness but protruding more with respect to conventional vessels so that the vessel may rest directly on container (1) and remain raised at the proper height from the bottom. With this container it is easier to raise the vessel (4) for the control or the restoration of the level of water (6) because the same vessel has a diameter with a border slightly greater than the border of the container.

A further embodiment of the invention is illustrated in Figs. 5 and 6. The vessel (11), which may have a different shape and dimensions, is capable of containing the soil (12) humidified with the same system and it may be used to cultivate different

flowers and plants. The separation between the soil (12) and the water (6) may be effected by means of a shaped structure (13) for example in the shape of omega as it is shown in Fig. 6. On top of the structure (13) is placed a strip (14) of felt or other suitable material and the strip is immersed with its lower edge to the bottom of the container thus achieving a humidification of the soil up to the time when the water is still water on the bottom of the container.

A pair of strips (15) having a web and a flange may be used as shown in Fig. 6 to prevent the water from dropping along the internal walls and thus in contact with the water.

The container or vessel according to the different embodiments always offers a compartment in which is placed water to achieve the humidification of the vessels and the container or vessel. This closed system is extremely useful to contain water which condenses in contact with the vessel walls so that the vessels when they are made of a material which is porous, or of a plastic material having small openings absorb the water which is condensed and maintains the soil with a sufficient amount of moisture and at the same time prevents the soil from drying.

The enclosed container offers a further advantage because it prevents the growth and the multiplication of mosquitoes or other insects which are usually present in stagnant water.

The embodiment according to the same means for the humidification of the vessels comprises three compartments separated by a plate (16) which has openings and a peripheral rib (17) for example on the peripheral rib (17) for example in the interior of the vessel, a water reservoir (6) separates the air chamber by one or more air holes. The vessel (11) may have a tronconical shape but may also have a rectangular shape but tapered at the top for example. The vessels can be made of terracotta, or other materials such as plastic, granular paste, or cement. If one uses terracotta vessels, the system of watering the vessels may be carried out with a bucket and water or other suitable material. The system can be made using any shape or form of three compartments.

The peripheral rib (17) may be provided with the desired number of lugs for supporting the plate (16), the lugs resting on the bottom of the vessel.

The upper compartment contains the soil used for the cultivation of plants and the lower compartment contains the water. The intermediate compartment contains the soil (24) that is to be used for the humidification of the soil.

soil when the water is introduced from above.

The water may drop through the mass of the soil in the lower compartment in view of the fact that the supporting plate (16) contains a certain number of openings (19) as shown in Figs. 8 and 10, which openings are distributed in the central part of the plate.

In order to avoid the soil dropping in contact with the water through the same openings, there is provided a piece of felt or similar material (20) as shown in Fig. 7 which allows only the water to reach the lower compartment.

In addition to the same openings, plate (16) comprises other openings (21) which are larger than the openings (19) and which are regularly distributed along the periphery of the plate. Each of openings (21) are intended to let a strip of felt or similar material (22) to go through as shown in Figures 7 and 9. This strip permits the humidification by means of water due to capillary action because the strip is immersed in the water and the water can reach the soil present in the upper compartment since the strip (22) is also present in the upper compartment.

Also, according to this embodiment, the soil is never in contact with water because two or more lateral openings (23) which prevent the presence of too much water are provided as shown in Figure 9. The latter openings (23) are formed at suitable level to permit the formation of an intermediate air chamber (24) from the level of the opening (23) up to the plate (16), plate (16) having openings. In this manner, it is possible to recycle air through the soil.

This embodiment permits to avoid the possibility of an excessive amount of water, or eventually rain to which the plants may be subjected, by causing excess water to drain from the soil and the vessel and the soil maintains a constant amount of moisture even under these conditions.

From what has been described and illustrated hereinabove, the novelty and the originality of the container and the novel vessel according to the invention are clear, particularly with respect to the automatic humidification of the soil which may continue also for a prolonged period of time and in the absence of human intervention.

It is clear also that in the production of the containers or the vessels according to the present invention, some modification may be carried out while maintaining the essential features because every modification in the production will fall within the scope of the present invention.

## Claims

1. The combination of a container (1, 10) and a vessel containing flowers and/or plants, which

comprises a container (1) having means for supporting at least one vessel (4), said vessel (4) having a bottom and containing in the interior thereof soil for the cultivation of said flowers or plants, said container having at the bottom thereof a predetermined amount of water (6), said water having a level, said level being lower than the bottom of said vessel (4), said vessel being supported within said container, said combination comprising means for humidifying said soil in said vessel, said means comprising strips of felt or other suitable material, said strips being inserted in said soil contained in said vessel (4), said strips being immersed in said water and transferring water due to capillary action to said soil (7) whereby said soil remains humidified for a substantial period of time while said bottom of said vessel is free from contact with said water (6), said container (1, 10) supporting said vessel (4) above said water reservoir (6).

2. The container according to claim 1 wherein said container (10) is adapted to contain a plurality of vessels and said vessels are supported by at least one plate (3), said plate (3) having openings of equal or different diameter whereby a plurality of vessels of a different size may be inserted in said container.
3. A container according to claims 1 or 2 wherein said vessel (4) has a first protruding peripheral border (5) and wherein said container (1) has a second peripheral border at the top thereof, whereby said vessel rests directly on said second peripheral border of said container and said vessel is easily raised during the operations of control and restoration of the water level in the interior of said container.
4. The combination according to claim 3 wherein water (6) forms a water reservoir, an air chamber (24) is formed enclosed by said plate (2), said vessel (4) and said container (1, 10), said air chamber forming an evaporation barrier and water condenses within said container and returns to said water reservoir.
5. A vessel for flowers and or plants which comprises a bottom and soil, a shaped member (13) in the interior thereof, said member (13) separating the soil from the bottom of said vessel, water (6) being placed at the bottom of said vessel, a piece of felt (14) in the inversed omega shape being placed in the lower part of said vessel, said piece of felt (14) having its lower parts immersed in said water, whereby water being required by said soil is transferred

to said soil by capillary action and evaporation.

6. The vessel according to claim 5 which is provided with a peripheral rib (17), said rib being placed at a predetermined height from said bottom, a plate (16) resting on the said rib, said plate (16) having openings whereby three compartments are formed, the upper compartment containing the soil, the lower compartment containing the water of reserve, and said intermediate compartment (24) forming an air chamber.

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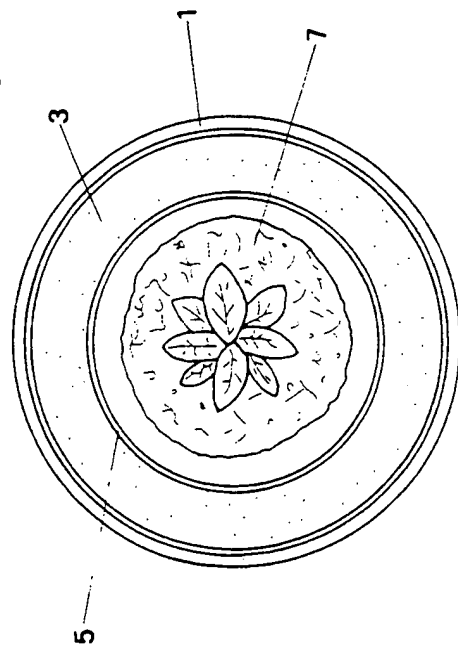
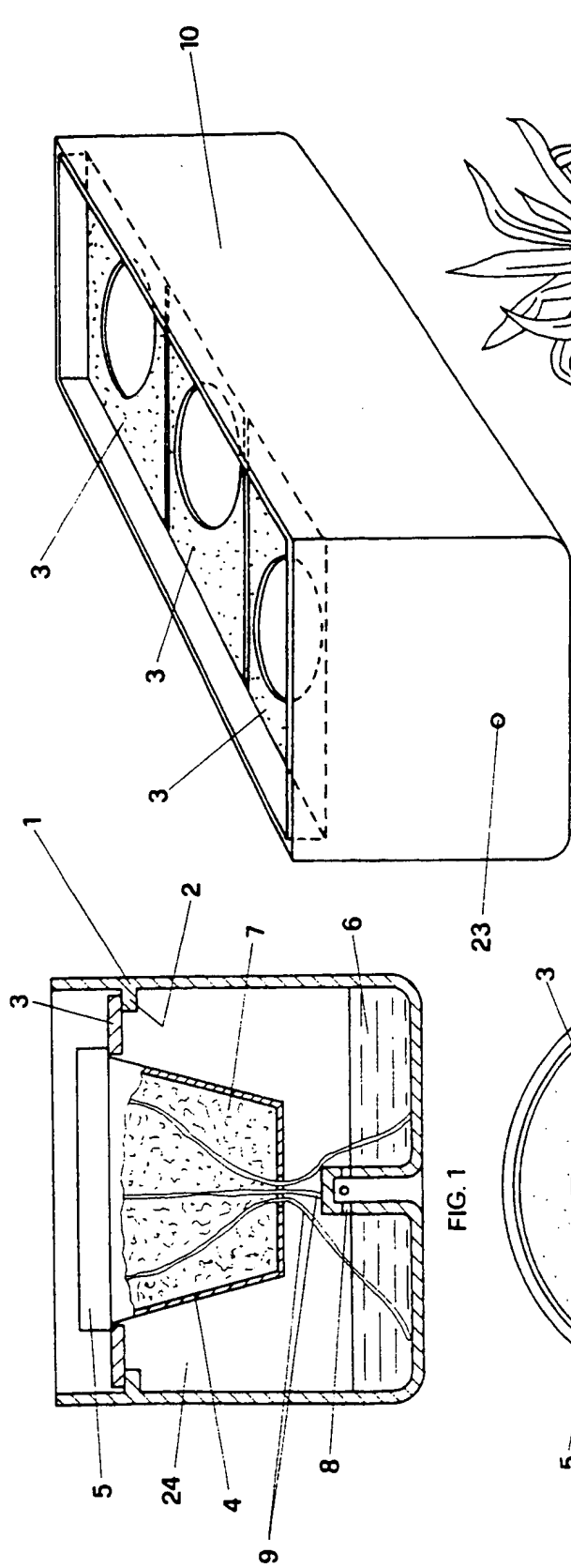


FIG. 1

FIG. 3

FIG. 4

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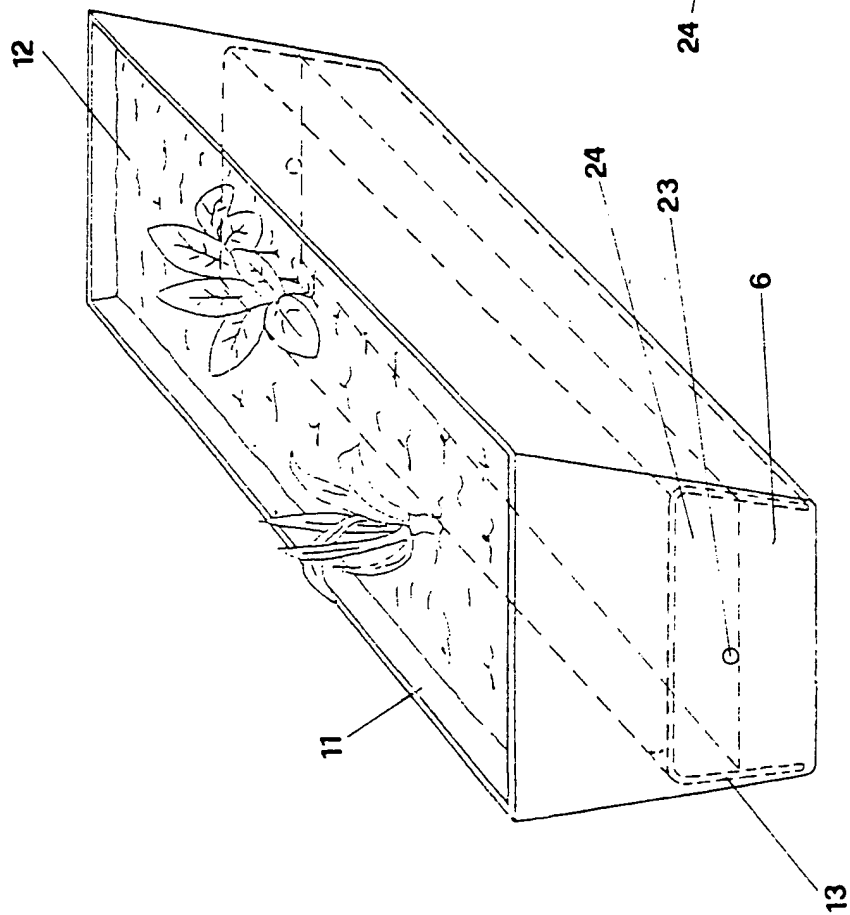


FIG. 5

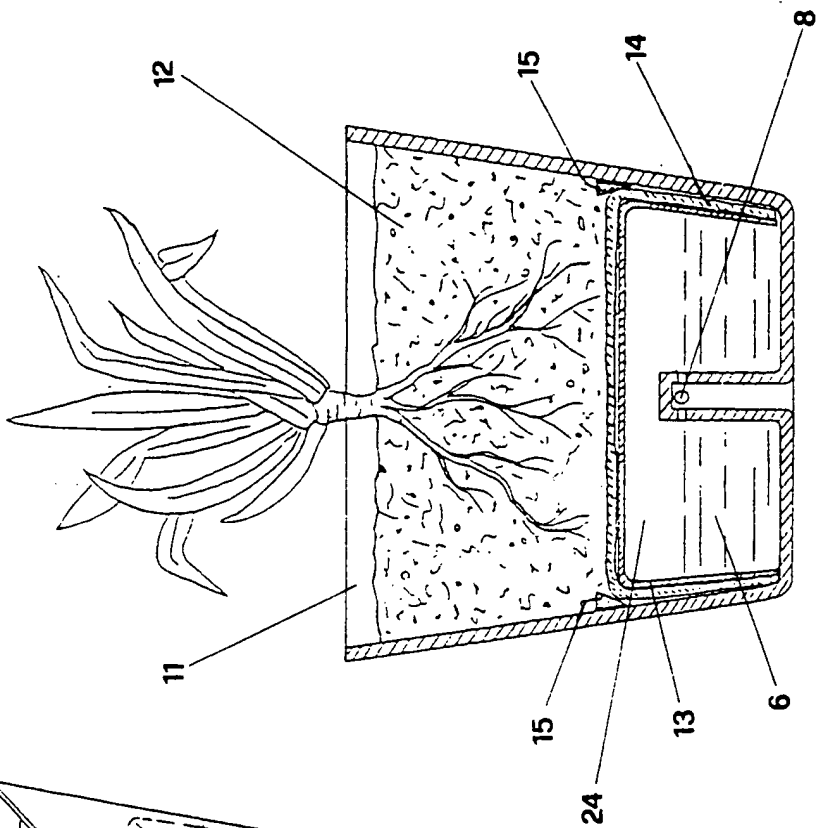


FIG. 6

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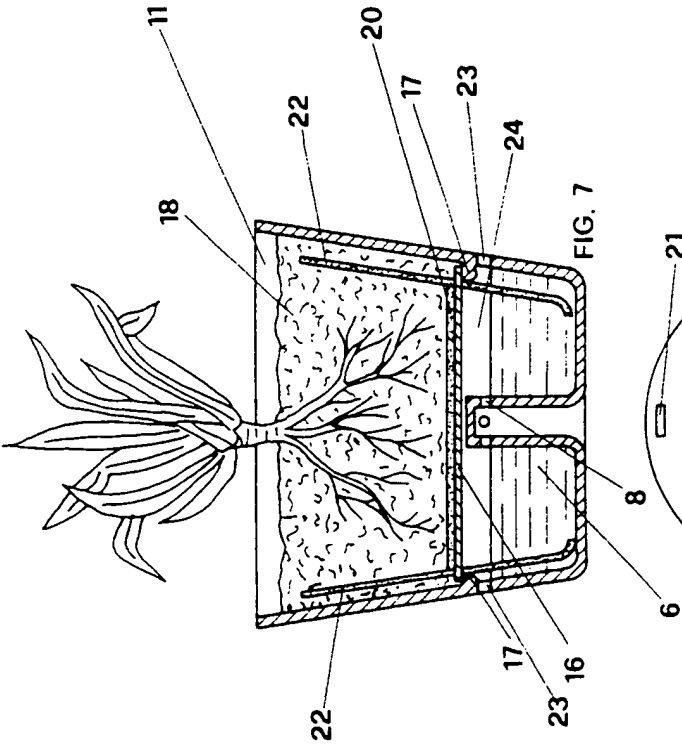


FIG. 7

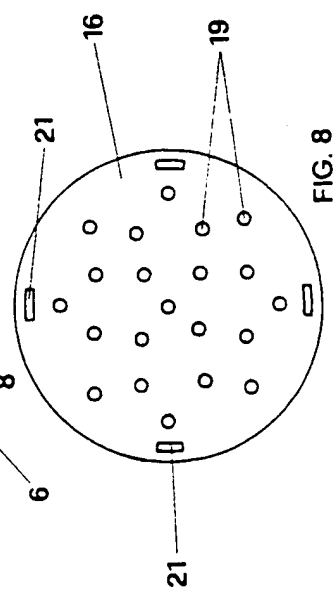


FIG. 8

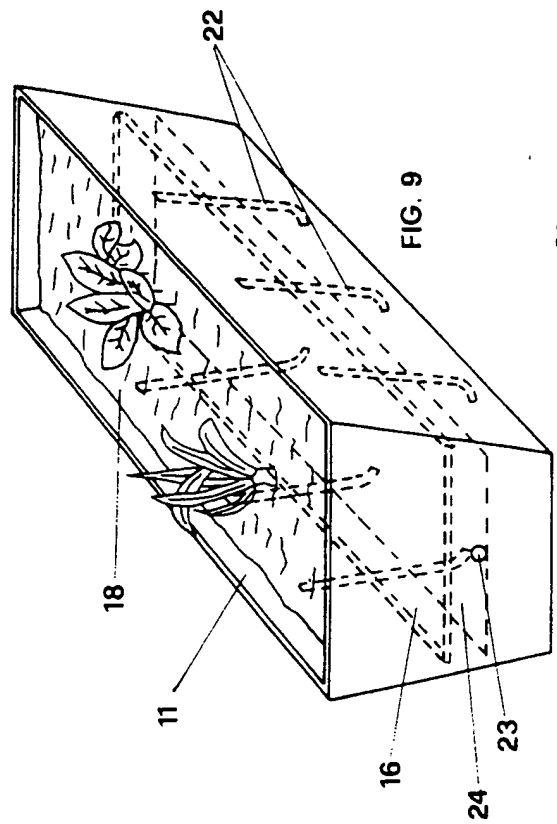


FIG. 9

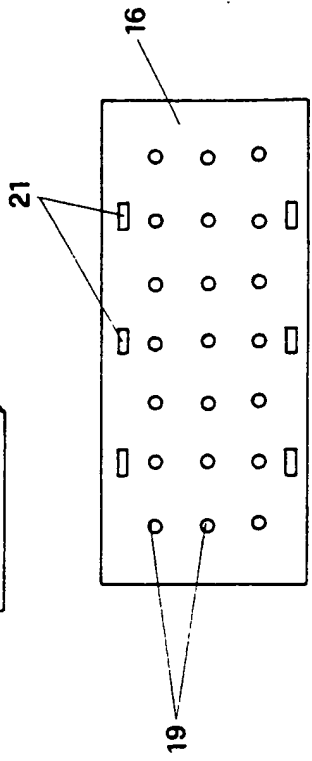


FIG. 10

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